

REMARKS

This is in response to the Office Action of November 19, 2008. Claim 1 is amended to recite compounds having the specified reactive groups, based upon disclosure on pages 17-19 of Applicants' specification. The form of claim 1 is also amended to place general formulas (1)-(3) adjacent to component (A), to which they relate. Claim 17 is rewritten in independent form. No new matter is introduced by this Amendment. Claims 1-18 are pending in the application, of which claims 12-16 stand withdrawn from consideration.

Withdrawal of claims

Applicants note that the requirement for restriction has been made final. However, Applicants respectfully request that – once the elected composition of matter claims are found to be allowable – the Examiner consider rejoinder of one or more of method claims 12-16 with the allowable compositions of matter.

Alleged indefiniteness and lack of sufficient enablement

Claims 1-11, 17, and 18 were rejected under the first paragraph of 35 U.S.C. § 112 as exceeding the scope of the enabling disclosure. Office Action, pages 2-4. Claims 1-11, 17, and 18 were also rejected under the second paragraph of 35 U.S.C. § 112 as failing to define the invention properly. Office Action, pages 5-6. The claims have been amended to remove most of the issues raised by the Examiner in this connection. However, Applicants respectfully request reconsideration of the rejections to the following extent.

With regard to the recitation in claims 1 and 4-6 of "capable of reacting" (see penultimate paragraph on page 4 of the Office Action, and third paragraph on page 5 of the Office Action), it should be noted X¹ and X⁴ in the polyorganosiloxane of formula (1) before the reaction thereof with conjugated diene polymer chains – see for instance process claim 12 – are defined as "a functional group capable of reacting with an active metal at a terminal of the active conjugated diene polymer chains, or are an alkyl group having 1 to 6 carbon atoms or an aryl group having 6 to 12 carbon atoms."

In contrast, the polyorganosiloxane of formula (1) expressed in product claim 1 is polyorganosiloxane after the reaction thereof with conjugated diene polymer chains. The

variable X^1 and X^4 in the polyorganosiloxane of formula (1) after said reaction are defined as (i) “a part of the sum of X^1 and X^4 is a functional group capable of reacting with an active metal at a terminal of the active conjugated diene polymer chains and the remainder of the X^1 and X^4 is a group derived from said functional group or a single bond, or (ii) X^1 and X^4 are an alkyl group having 1 to 6 carbon atoms or an aryl group having 6 to 12 carbon atoms.” Thus, the variables in question are properly defined in their current form in claims 1-11, 17, and 18.

As for the meaning of the phrases “a part of the sum of X^1 and X^4 ” and “the remainder of the sum of X^1 and X^4 ”, Applicants respectfully submit the following explanation. A polyorganosiloxane is a mixture of a multiplicity of polyorganosiloxane molecules with different chemical compositions and/or different molecular weights. Thus, the mixture contains a multiplicity of different embodiments for the X^1 s and X^4 s. By the above-mentioned phrases, the claims denote in effect “a part of the sum of X^1 s and X^4 s in the mixture” and “the remainder of the sum of X^1 s and X^4 s in the mixture.” This explanation also applies to other variables in the polyorganosiloxanes recited in the claims.

Applicants respectfully submit that claims 1-11, 17, and 18 as amended herein satisfy the requirements of the first and second paragraphs of 35 U.S.C. § 112.

Prior art rejection

Claims 1-11, 17, and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over US 6,767,969 B2 (Sasagawa) in view of US 4,657,965 (Watanabe). Office Action, pages 6-7. The rejection is respectfully traversed.

As acknowledged by the Examiner, Sasagawa fails to teach the polyorganosiloxane bonded nonconjugated diene rubber in the rubber blend. Thus, Sasagawa suggests nothing about the instantly claimed conjugated diene rubber composition.

Watanabe discloses a silicone elastomer composition having crosslinking points, which comprises a polyorganosiloxane, an inorganic filler, and a vulcanizer. Watanabe is silent as to a conjugated diene rubber wherein at least three conjugated diene polymer chains in said rubber are bonded together through the polyorganosiloxane.

In the conjugated diene rubber component (A) in the conjugated diene rubber composition of the present invention, at least three conjugated diene polymer chains in said

rubber are bonded together through the polyorganosiloxane in a bonding manner such that the functional groups X_1 , X_4 and X_2 in the polyorganosiloxane of formula (1) is reacted with an active metal at a terminal of each active conjugated diene polymer chain. This can be seen, for instance, from the definition for X_1 , X_4 and X_2 in the polyorganosiloxane of formula (1) herein. Watanabe is completely silent as to such conjugated diene rubbers wherein conjugated diene polymer chains are bonded through the polyorganosiloxane in such a bonding manner. Watanabe fails to teach or suggest anything about the conjugated diene rubber composition of the present invention which comprises the above-mentioned conjugated diene rubber component (A) and the conjugated diene rubber component (B).

The molded article obtained from the silicone elastomer composition disclosed in Watanabe is used for tubes, products of profile extrusion, packings and gaskets. Column 16, lines 33-36. In contrast, the conjugated diene rubber composition of the present invention provides a vulcanizable rubber composition having improved processability when silica is incorporated therein, and the vulcanizable rubber composition gives a rubber vulcanizate having well reduced heat build up, enhanced wet-grip property and high abrasion resistance. Specification, page 3, second paragraph. The rubber vulcanizate of the present invention is suitable for tires. Specification, page 63, second paragraph. Thus the conjugated diene rubber composition of the present invention is clearly distinguished from the silicone elastomer composition disclosed in Watanabe.

Accordingly, even if the Watanabe disclosure is combined with the Sasagawa disclosure, the subject matter of claims 1-11, 17 and 18 is not obvious from that hypothetical combination of references. Withdrawal of the rejection of record is in order and is earnestly solicited.

Contact information

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Gallagher, Registration No 28,781 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to our Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under § 1.17; particularly, extension of time fees.

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Respectfully submitted,

By 
Marc S. Weiner
#28,781

Registration No.: 32,181
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant